

REMARKS

Claims 1, 6-8, 10, 11 and 17 are pending.

Claims 1,7 and 8 are amended.

Examiner states in claim 7, (b) can be 2-5 wt % which is not in claim 1. Examiner has misinterpreted claim 7. Applicants have amended to clarify that the weight % referred to is the total water-soluble anionic polymer as a % of the aqueous soil treatment. Thus claim 7 is a further limitation on claim 1 wherein the total anionic polymer makes up 2-5 wt % of the aqueous soil treatment. Support for this amendment is found on page 5, paragraph 5.

Claims 1 and 8 are amended as suggested by the Examiner. "Fertiliser" has been changed to "fertilizer".

35 U.S.C. § 103(a)

Claims 1, 6-8, 10, 11 and 17 are rejected under 35 U.S.C. § 103(a) as being unpatentable over et al. EP 586,911 and Sylling et al. WO 85/01938.

For clarity, the Applicants state that the invention is: a concentrated composition, which contains polymer and at least 10 wt. % fertilizer, has an extraordinary low viscosity which allows dosing of the concentrated composition to water using dosing equipment in place for concentrated fertilizer solutions. The Applicants have amended claim 1 to more particularly point out the invention. Neither Sylling nor EP '911 recognizes the low viscosity advantages of the inventive compositions comprising high anionic content (60 to 80%) with high fertilizer content (at least 10%) as will be explained below.

Examiner alleges that Applicants have not included an example in their specification for the invention they are claiming. See page 2, line 15 of the Office Response. An example of polymeric compound b) is polymer B (65 wt. % anionic monomer and 35 wt. % nonionic monomer, page 11, first two lines). Compositions containing 2 wt. % of this polymer and various fertilizers, namely urea ammonium nitrate (table 1, line 3), ammonium sulfate (table 1, line 6) and potassium chloride (table 2, line 4 and 5), show extremely low viscosities, namely 1510 cPs, 640 cPs, 350 and 375 cPs. This advantage is now reflected in amended claim 1 wherein the aqueous soil treatment composition is suitable for being processed in dosing equipment which is in place for processing solutions of fertilizer alone and the aqueous soil treatment composition stabilizes and fertilizes the soil. In addition the compositions

containing polymer B, and various fertilizers still show excellent soil stabilizing characteristics as can be seen by the flocculation values, which are 28.5% (table 1, line 3), 37.6% (table 1 line 6), 37.2% (table 2, line 4) and 22.9% (table 2, line 5) based on the flocculation value of the control (no polymer).

Compositions containing 2 w% of a polymer having an anionic monomer content outside the range of 60 to 80 w% and various fertilizers all, despite two exceptions, show viscosities above 3500 cPs (tables 1 and 2). The exceptions are the compositions containing polymer E (table 1, line 8) and polymer H (table 2, line 6), which show viscosities of 90 and 1250 cPs, respectively. The composition containing polymer E, however, does not show any soil stabilizing effect.

The fact that only soil treatment compositions containing at least 10 w% fertilizer and a polymer having an anionic monomer content of 60 to 80 w% and a nonionic monomer content of 20 to 40 w% show exceptional low viscosities is an unexpected result, which could not be predicted by a skilled person. Therefore the claimed invention is unobvious.

EP 0 586 911 A1 discloses a soil treatment composition which can be used in any location where water loss from soil is a problem and revegetation is required. The composition is an aqueous solution comprising 0.5 to 15 w% water-soluble polymer, a polyvalent metal, an oxidizing agent and 0.5 to 60 w% nutrients (page 3, lines 3 to 18, page 3, lines 48 to 50, page 4, lines 1 to 2). The composition is directly applied to soil whereupon it forms a gel. This gel holds the nutrients and at the same time absorbs and retains water (page 10, lines 1 to 3, page 2, lines 55 to 57). The water-soluble polymer of the composition can be a copolymer of acrylamide and acrylic acid or salts thereof (page 3, lines 40 to 45). However, in particular disclosed are only water-soluble anionic polymers formed from 10 w% anionic monomer and 90 w% nonionic monomer (examples 1 to 4, 7 and 8) or from 100 w% anionic monomer (example 5). The gellable composition disclosed in EP '911 is applied to the soil without prior dilution with water whereas the instant composition is "intended particularly as a concentrate for use in irrigation, in which processes it will be diluted and applied to soil area (see page 8, 2nd paragraph). Therefore, EP '911 relates to a different technical area and a skilled person would not consider EP '911 as relevant prior art when looking for a soil treatment composition which is suitable for being processed using the dosing equipment in place for processing solutions of fertilizer alone. In addition, the claimed composition differs from the composition of EP '911 in that it contains a water-soluble polymer formed from 60 to 80 w% anionic monomer and 20 to 40% nonionic monomer, showing unexpected low viscosity in the composition of the instant invention as argued above and in that it does not contain a redox couple.

Sylling et al. WO 85/01938 describes a soil treatment composition which is an aqueous solution comprising organophosphorus acids and an anionic water-soluble low molecular weight polymer (page 5, lines 3 to 7). This composition is used for desalination of soil and definitely not suitable for fertilization and soil stabilization. In fact, the anionic of Sylling is "not intended as a means of introducing fertilizers to crops." See page 6, lines 18-21. WO85/01938 teaches to take off salts from the soil. The instant invention deals with compositions, which add fertilizer to the soil. Thus, Sylling relates to a different technical area and does not constitute relevant prior art. In addition, the claimed composition differs from the composition of WO 85/01938 in that it contains a water-soluble polymer of high molecular weight formed from 60 to 80 w% anionic monomer.

WO 85/01938 also does not render obvious the claimed composition when combined with EP '911, because WO 85/01938 does not disclose aqueous solutions comprising a water-soluble polymer having an intrinsic viscosity from 9 to 12 dl/g and an anionic monomer content from 60 to 80 w%. Furthermore, as explained above the anionic of Sylling is "not intended as a means of introducing fertilizers to crops." It is well-settled that the mere fact that the prior art could be modified to form the invention would not make that modification obvious unless the prior art suggested the desirability of the modification. In re Laskowski, 10 U.S.P.Q. 2d 1397, 1398 (Fed. Cir. 1989); In re Gordon, 733 F.2d 900, 902, 221 U.S.P.Q. 1125, 1127 (Fed. Cir. 1984). It is submitted that the cited art does not teach or suggest the desirability of modifying EP '911 to incorporate the disclosed water soluble anionic composition of Sylling as the compositions of Sylling are used for desalination of soil and definitely not suitable for fertilization and soil stabilization.

It is submitted that neither EP '911 or Sylling singly or together:

1. Teaches the inventive low viscosity water-soluble anionic copolymer composition of the instant invention.
2. Neither reference recognizes the unexpected exemplified viscosity advantages of the particular anionic composition of the present invention shown in table I of the instant specification.
3. And finally the combining of the two references is improper because the compositions of Sylling are not suitable for fertilization.

Thus the 103 (a) rejections based on Sylling and EP '911 are improper and respectfully request reconsideration by the Examiner.

Claims 1, 6-8, 10, 11 and 17 are rejected under 35 USC 103(a) as being unpatentable over JP 51-124578.

JP 51-124578 discloses a soil treatment composition which is an aqueous solution comprising fertilizer and a water-soluble polymer consisting of 50 to 70 w% acrylamide and 30 to 50 w% potassium acrylate (page 2, third paragraph). This composition imparts to soil water-resistant aggregation ability and water-permeability as well as water retention property and is further useful as a fertilizer (page 1, third paragraph). It is usually diluted to a concentration of 1 to 10 w% fertilizer before being applied to the soil by appropriate methods such as spraying or dusting (page 3, second full paragraph). In example c) an aqueous solution comprising 11 w% fertilizer and 20 w% water-soluble polymer formed from 50 w% acrylamide and 50 w% acrylic acid is diluted by factor ten before being applied to sand soil.

The claimed composition differs from the composition disclosed in JP 51-124578 in that it contains a water-soluble polymer formed from 60 to 80 w% anionic monomer and 20 to 40 w% nonionic monomer. The advantage of this kind of polymer is discussed above (low viscosity when in a monomer. The advantage of this kind of polymer is discussed above (low viscosity when in a composition as in claim 1 and suitable for dosing as in amended claim). The composition disclosed in JP 51-124578 can be diluted by water and then applied to the soil. However, it is not disclosed if this composition can also be added easily to irrigation water and thus is suitable for being processed using the dosing equipment which is in place for processing solutions of fertilizer alone. Based on the results presented in the present application the viscosity of the composition disclosed in JP 51-124578 should be much higher than that of the claimed composition. Therefore, as the inventive composition shows unexpected advantages (low viscosity with high concentration of fertilizer) in light of tables 1 and 2 in the instant disclosure, the 103(a) rejection for JP '578 is overcome.

Reconsideration and withdrawal of the rejection of claims 10-16 is respectfully solicited in light of the amendments and remarks *supra*.

Since there are no other grounds of objection or rejection, passage of this application to issue with claims 10-16 is earnestly solicited.

Applicants submit that the present application is in condition for allowance. In the event that minor amendments will further prosecution, Applicants request that the examiner contact the undersigned representative.

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'Tyler Stevenson', with a long horizontal flourish extending to the right.

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